

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A bipolar plate, comprising:
a fluid barrier having a cathode side and an anode side; and
a sealing frame formed around a perimeter of the fluid barrier, wherein the sealing frame includes an anode sealing frame and a first gasket to provide a sealing surface between an anode side of the bipolar plate and a first membrane and electrode assembly, a cathode sealing frame having a second gasket to provide a sealing surface between a cathode side of the bipolar plate and a second membrane and electrode assembly, and a third gasket to provide a sealing surface between the cathode sealing frame and the anode sealing frame.
2. (previously presented) The bipolar plate of claim 1, wherein the fluid barrier is metal.
3. (previously presented) The bipolar plate of claim 1, wherein the fluid barrier is a material selected from titanium, stainless steel, nickel, tantalum, niobium, and alloys thereof.
4. (previously presented) The bipolar plate of claim 1, wherein the fluid barrier is plated with a metal.
5. (previously presented) The bipolar plate of claim 4, wherein the metal is selected from gold, silver, copper, platinum, and combinations thereof.
6. (currently amended) The bipolar plate of claim 1, further comprising:
~~a first~~the anode side of the fluid barrier having an anode flow field; and
~~a second~~the cathode side of the fluid barrier having a cathode flow field.

7. (previously presented) The bipolar plate of claim 6, wherein the anode flow field and the cathode flow field are attached to the fluid barrier before the sealing frame is formed around the perimeter.
8. (previously presented) The bipolar plate of claim 7, wherein the anode flow field and the cathode flow field are attached to the fluid barrier by methods selected from adhesives, sintering, soldering and combinations thereof.
9. (previously presented) The bipolar plate of claim 6, wherein the anode flow field and the cathode flow field are formed from a material selected from expanded metal mesh, metal foam, conducting polymer foam, porous conductive carbon material and combinations thereof.
10. (previously presented) The bipolar plate of claim 6, wherein at least one of the anode flow field and the cathode flow field is chemically etched into the fluid barrier.
11. (cancelled)
12. (previously presented) The bipolar plate of claim 1, wherein the first and second gaskets are applied by print screening.
13. (previously presented) The bipolar plate of claim 1, wherein the first and second gaskets are incorporated into the sealing frame.
14. (previously presented) The bipolar plate of claim 1, further comprising components selected from alignment pins, alignment holes, reinforcing liners for fluid passages, fluid manifolds and combinations thereof, wherein the sealing frame is formed around the components.
15. (currently amended) The bipolar plate of claim 1, wherein the sealing frame comprises an injected polymer selected from a thermoplastic, a thermoset, a reactive set and combinations thereof.

16. (currently amended) The bipolar plate of claim 1, wherein the sealing frame comprises an injected polymer selected from polyvinylidene fluoride, polyvinylidene difluoride, polytetrafluoroethylene, polyamides, polysulfone, polyetherketones, polycarbonate, polypropylene, polyimides, polyurethanes, epoxies, silicones, or a combinations combination thereof.
17. (previously presented) The bipolar plate of claim 16, wherein the injected polymer is mixed with a filler.
18. (previously presented) The bipolar plate of claim 17, wherein the filler modifies the performance of the polymer.
19. (previously presented) The bipolar plate of claim 17, wherein the filler is a diluent.
20. (previously presented) The bipolar plate of claim 17, wherein the filler is an aromatic polyamide fiber.
21. (currently amended) A bipolar plate, comprising:
 - a gas fluid barrier having a cathode side and an anode side;
 - a cathode sealing frame adapted to receive a perimeter of the cathode side of the fluid barrier;
 - an anode sealing frame adapted to receive a perimeter of the anode side of the fluid barrier, wherein the cathode sealing frame and anode sealing frame are bonded together to form a fluid seal;
 - a first gasket to provide a sealing surface between an anode side of the bipolar plate and a first membrane and electrode assembly;
 - a second gasket to provide a sealing surface between a cathode side of the bipolar plate and a second membrane and electrode assembly; and
 - a third gasket to provide a sealing surface between the cathode sealing frame and the anode sealing frame.
22. (previously presented) The bipolar plate of claim 21, wherein the fluid barrier is metal.

23. (previously presented) The bipolar plate of claim 21, wherein the fluid barrier is a material selected from titanium, stainless steel, nickel, tantalum, niobium, and alloys thereof.
24. (previously presented) The bipolar plate of claim 21, wherein the fluid barrier is plated with a metal.
25. (previously presented) The bipolar plate of claim 24, wherein the metal is selected from gold, silver, copper, platinum, and combinations thereof.
26. (previously presented) The bipolar plate of claim 21, further comprising:
the anode side of the fluid barrier having an anode flow field; and
the cathode side of the fluid barrier having a cathode flow field.
27. (previously presented) The bipolar plate of claim 26, wherein the anode flow field and the cathode flow field are attached to the fluid barrier before the cathode sealing frame and the anode sealing frame are bonded together.
28. (previously presented) The bipolar plate of claim 27, wherein the anode flow field and the cathode flow field are attached to the fluid barrier by methods selected from adhesives, sintering, soldering and combinations thereof.
29. (previously presented) The bipolar plate of claim 26, wherein the anode flow field and the cathode flow field are formed from a material selected from expanded metal mesh, metal foam, conducting polymer foam, porous conductive carbon material and combinations thereof.
30. (previously presented) The bipolar plate of claim 26, wherein at least one of the anode flow field and the cathode flow field is chemically etched into the fluid barrier.

31. (previously presented) The bipolar plate of claim 21, wherein a material used to form the sealing frames is a polymer.
32. (previously presented) The bipolar plate of claim 31, wherein the polymer is selected from a thermoplastic, a thermoset, a reactive set and combinations thereof.
33. (previously presented) The bipolar plate of claim 31, wherein the polymer is selected from polyvinylidene fluoride, polyvinylidene difluoride, polytetrafluoroethylene, polyamides, polysulfone, polyetherketones, polycarbonate, polypropylene, polyimides, polyurethanes, epoxies, silicones, and combinations thereof.
34. (previously presented) The bipolar plate of claim 33, wherein the selected polymer is mixed with a filler.
35. (previously presented) The bipolar plate of claim 34, wherein the filler modifies the performance of the polymer.
36. (previously presented) The bipolar plate of claim 34, wherein the filler is a diluent.
37. (previously presented) The bipolar plate of claim 34, wherein the filler is an aromatic polyamide fiber.
38. (cancelled)
39. (previously presented) The bipolar plate of claim 21, wherein the cathode sealing frame and the anode sealing frame are bonded by a method selected from heat welding, chemical welding, adhesives, and combinations thereof.
40. (cancelled)

41. (previously presented) The bipolar plate of claim 21, wherein at least one of the gaskets is an o-ring.

42. (previously presented) The bipolar plate of claim 21, wherein at least one of the gaskets is incorporated into one of the sealing frames.

43. (previously presented) The bipolar plate of claim 21, wherein at least one of the gaskets is applied by print screening.

44. (previously presented) The bipolar plate of claim 21, wherein the anode sealing plate and the cathode sealing plate further comprise components selected from alignment pins, alignment holes, reinforcing liners for gas passages, gas manifolds and combinations thereof.

45. (currently amended) The bipolar plate of claim 44, wherein the fluid barrier is a gas barrier that does not extend to the components.

46. (currently amended) The bipolar plate of claim 44, wherein the fluid barrier is a gas barrier that overlaps the anode sealing frame and the cathode sealing frame only a sufficient amount to create a gas-tight seal.

47 – 85. (cancelled)